

CLAIMS

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1. Process for relaying IP frames in the form
PDU application frames within an ATM switch with
distributed architecture and egress storage comprising
a management module and several ingress (7i...7k) and
egress (7j) junctors having a routing emulation
function ensuring IP frame routing between the users of
various ELAN media and represented in each of these
ELANs by its router LEC module, characterized in that
it consists in offloading the frame relay function into
the ATM layer of the junctors by examining the first
cell of each PDU application frame arriving at an
ingress junctor (7i...7k) so as to extract therefrom
the IP address of the destination, by searching in a
cache table (9i...9k) of the junctor for a pair
(logical path, outbound direction) opposite the
relevant IP address and opposite the ingress logical
path and by using the translation obtained for all the
cells of the PDU application frame, the cache table
(9i...9k) being updated by virtue of the routing
information originating from the routing emulation
function residing in the management module (4) and in
that it consists in transmitting a request to update
the cache (9i...9k) to the management module (4) if the
sought-after IP address is not located thereat or if
the information opposite this address is too old.

2. Process according to Claim 1, characterized
in that it consists in performing a double translation,
a first translation in each ingress junctor (7i...7k)
so as to transform the logical path number VLi (UX)
between the user UX and the LEC module of the router
relating to the ELAN to which the user UX belongs and
the IP address of the destination of each application
frame originating from the user (UX) applied to the
ingress of a junctor (7i...7k) into an internal index
number VM (UX, UY) and an identifier number Lj of an
egress junctor (7j), a second translation in each
egress junctor (7j) so as to transform the index number

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VM (UX, UY) into a logical path number VLi (UY) associated in the egress junctor (7j) with the direct connection between the user UY and his corresponding router LEC A modulend a queue number for the egress
5 junctor (7j) allocated to the pair (UX, UY).

3. Process according to any one of Claims 1 and 2, characterized in that it consists:

- in allocating in each egress junctor (7j) a queue (11_n) for each user pair, the second of whom is
10 attached to the relevant junctor, that is to say that the direct connection between himself and the corresponding router LEC module passes through this junctor,

- in dynamically allocating the internal
15 indices and the egress queues (11_n) in conjunction with the updating of the ingress translation caches (9i...9k),

- and in using a mode for arbitration in PDU mode between the various queues so as to ensure the
20 transmission of the cells without interleaving of the PDU frames.

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